

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,043,510 B1
APPLICATION NO. : 09/597478
DATED : May 9, 2006
INVENTOR(S) : Rajendra Kumar Bera

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The 27th line of column 4, as set out in the printed patent, which reads
" $e_{11}x_1 + e_{12}x_2 + e_{13}x_3 + \dots + e_{1n}x_n = b_1$ " should read -- $e_{11}x_1 + e_{12}x_2 + e_{13}x_3 + \dots + e_{1n}x_n = b_1$ --.

The 29th line of column 4, as set out in the printed patent, which reads
" $e_{21}x_1 + e_{22}x_2 + e_{23}x_3 + \dots + e_{2n}x_n = b_2$ " should read -- $e_{21}x_1 + e_{22}x_2 + e_{23}x_3 + \dots + e_{2n}x_n = b_2$ --.

The 32nd line of column 4, as set out in the printed patent, which reads
" $e_{n1}x_1 + e_{n2}x_2 + e_{n3}x_3 + \dots + e_{nn}x_n = b_n$ " should read -- $e_{n1}x_1 + e_{n2}x_2 + e_{n3}x_3 + \dots + e_{nn}x_n = b_n$ --.

The 50th line of column 4, as set out in the printed patent, which reads "... where l_{ii} and r_i are algebraic expressions ..." should read -- where l_{ii} and r_i are algebraic expressions ... --

The 10th line of column 6, as set out in the printed patent, which reads "In each term operands are sorted (rearranged) in ascending order ..." should read -- In each term the operands are sorted (rearranged) in ascending order ... --.

The 3rd line of column 7, as set out in the printed patent, which reads
" $e_{jk} = e_{jk}e_{11} - e_{1k}e_{j1}$; and" should read -- $e_{jk} = e_{jk}e_{11} - e_{1k}e_{j1}$; and --.

The 5th line of column 7, as set out in the printed patent, which reads
" $b_j = b_j e_{11} - b_1 e_{j1}$," should read -- $b_j = b_j e_{11} - b_1 e_{j1}$, --.

The 42nd line of column 7, as set out in the printed patent, which reads
" $e_{jk} = e_{jk}^{l-1} e_{11}^{l-1} - e_{1k}^{l-1} e_{j1}^{l-1}$," should read -- $e_{jk} = e_{jk}^{l-1} e_{11}^{l-1} - e_{1k}^{l-1} e_{j1}^{l-1}$, --.

The 44th line of column 7, as set out in the printed patent, which reads
" $b_j = b_j^{l-1} e_{11}^{l-1} - b_1^{l-1} e_{j1}^{l-1}$," should read -- $b_j = b_j^{l-1} e_{11}^{l-1} - b_1^{l-1} e_{j1}^{l-1}$, --.

The 46th line of column 7, as set out in the printed patent, which reads
"for $l=1, \dots, n-1$; $(j,k)=l+1, \dots, n$," should read -- for $l=1, \dots, n-1$; $(j,k)=l+1, \dots, n$, --.

The 56th line of column 7, as set out in the printed patent, which reads "... calculating the unknown x_i , the product $l_{ij}x_i$ is calculated, ..." should read -- ... calculating the unknown x_i , the product $l_{ij}x_i$ is calculated, ... --.

The 58th line of column 7, as set out in the printed patent, which reads "... a ratio $x_i = r_i / l_{ij}$ with r_i a numerator and l_{ij} a denominator. With ..." should read -- ... a ratio $x_i = r_i / l_{ij}$ with r_i a numerator and l_{ij} a denominator. With ... --.

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The 63rd line of column 7, as set out in the printed patent, which reads
" $l_{nn} = n^{-1} e_{nn}$ " should read -- $l_{nn} = n^{-1} e_{nn}$ --.

The 49th line of column 8, as set out in the printed patent, which reads "Note that since l_{ij} is a factor of $l_{i+1, i+1}$, R_{ij} will be free of . . ." should read -- Note that since l_{ij} is a factor of $l_{i+1, i+1}$, R_{ij} will be free of . . . --.

The 51st line of column 8, as set out in the printed patent, which reads ". . . back substitution step 280 where factors common to l_{ij} and . . ." should read -- . . . back substitution step 280 where factors common to l_{ij} and . . . --.

Th 54th line of column 8, as set out in the printed patent, which reads ". . . SLAEs systems S_1 and S_2 , string arrays $(l_{ii})_1$ and $(r_i)_1$. . ." should read -- . . . SLAEs systems S_1 and S_2 , string arrays $(l_{ii})_1$ and $(r_i)_1$. . . --.

The 55th line of column 8, as set out in the printed patent, which reads ". . . and $(l_{ii})_2$ and $(r_i)_2$ for system S_2 . . ." should read -- . . . and $(l_{ii})_2$ and $(r_i)_2$ for system S_2 . . . --.

The 58th line of column 8, as set out in the printed patent, which reads ". . . respective string arrays l_{ij} and r_i where shown . . ." should read -- . . . respective string arrays l_{ij} and r_i where shown . . . --.

The 2nd line of column 9, as set out in the printed patent, which reads ". . . step 290 calculates expressions $(l_{ii})_1 * (r_i)_2$ and $(l_{ii})_2 * (r_i)_1$ for . . ." should read -- . . . step 290 calculates expressions $(l_{ii})_1 * (r_i)_2$ and $(l_{ii})_2 * (r_i)_1$ for . . . --.

The 3rd line of column 9, as set out in the printed patent, which reads "If all the expressions $(l_{ii})_1 * (r_i)_2$ and . . ." should read -- If all the expressions $(l_{ii})_1 * (r_i)_2$ and . . . --.

The 4th line of column 9, as set out in the printed patent, which reads ". . . $(l_{ii})_2 * (r_i)_1$ have been consistently . . ." should read -- . . . $(l_{ii})_2 * (r_i)_1$ have been consistently . . . --.

The 6th line of column 9, as set out in the printed patent, which reads ". . . of $(l_{ii})_1 * (r_i)_2$ with $(l_{ii})_2 * (r_i)_1$." should read -- . . . of $(l_{ii})_1 * (r_i)_2$ with $(l_{ii})_2 * (r_i)_1$. --.

The 55th line of column 9, as set out in the printed patent, which reads "// contain l_{ii} " should read -- . . . // contain l_{ii} --.

The 57th line of column 9, as set out in the printed patent, which reads "The solution will be $x_i = l_{ii}/r_i$." should read -- . . . The solution will be $x_i = l_{ii}/r_i$. --.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The 49th line of column 11, as set out in the printed patent, which reads "... numerators r_i and the denominators l_{ii} can be found." should read -- ... numerators r_i and the denominators l_{ii} can be found --.

The 51st line of column 11, as set out in the printed patent, which reads "... r_3 and the denominator l_{33} are as follows:" should read -- ... r_3 and the denominator l_{33} are as follows: --.

The 57th line of column 11, as set out in the printed patent, which reads "Substituting numerator r_3 and denominator l_{33} ..." should read -- Substituting numerator r_3 and denominator l_{33} ... --.

The 64th line of column 11, the variable in the right hand side of the table, which reads " l_{22} " should read -- l_{22} --.

The 13th line of column 12, the variable in the right hand side of the table, which reads " l_{11} " should read -- l_{11} --.

The 64th line of column 12, the variable in the right hand side of the table, which reads " l_{33} " should read -- l_{33} --.

The 17th line of column 13, as set out in the printed patent, which reads "Substituting numerator r_3 and denominator l_{33} ..." should read -- Substituting numerator r_3 and denominator l_{33} ... --.

The 24th line of column 13, the variable in the right hand side of the table, which reads " l_{22} " should read -- l_{22} --.

The 40th line of column 13, the variable in the right hand side of the table, which reads " l_{11} " should read -- l_{11} --.

The 52nd line of column 13, as set out in the printed patent, which reads "Performing step 290, the expressions $(l_{ii})_1 * (r_i)_2$ and (l_{ii}) ..." should read -- Performing step 290, the expressions $(l_{ii})_1 * (r_i)_2$ and (l_{ii}) ... --.

The 54th line of column 13, as set out in the printed patent, which reads "... example, calculating $(l_{22})_1 * (r_2)_2$ gives the following:" should read -- ... example, calculating $(l_{22})_1 * (r_2)_2$ gives the following: --.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

The 1st line of column 14, as set out in the printed patent, which reads "Step 290 similarly calculates the expressions $(l_{ii})_1^*(r_i)_2 \dots$ " should read -- Step 290 similarly calculates the expressions $(l_{ii})_1^*(r_i)_2 \dots$ --.

The 15th line of column 14, as set out in the printed patent, which reads "Similarly, calculating $(l_{22})_2^*(r_2)_1$ gives the following:" should read -- Similarly, calculating $(l_{22})_2^*(r_2)_1$ gives the following: --.

The 16th line of column 14, as set out in the printed patent, which reads "... and $(l_{ii})_2^*(r_i)_1 \dots$ " should read -- ... and $(l_{ii})_2^*(r_i)_1 \dots$ --.

The 17th line of column 14, as set out in the printed patent, which reads "... $(l_{22})_1^*(r_2)_2$ with $(l_{22})_2^*(r_2)_1, \dots$ " should read -- ... $(l_{22})_1^*(r_2)_2$ with $(l_{22})_2^*(r_2)_1, \dots$ --.

The 19th line of column 14, as set out in the printed patent, which reads "... of $(l_{ii})_1^*(r_i)_2$ with $(l_{ii})_2^*(r_i)_1 \dots$ " should read -- ... of $(l_{ii})_1^*(r_i)_2$ with $(l_{ii})_2^*(r_i)_1 \dots$ --.

The 36th line of column 15, as the claim is set out in the printed patent, which reads " $(l_{ij})_k x_i = (r_i)_k$ " should read -- $(l_{ii})_k x_i = (r_i)_k$ --.

The 38th line of column 15, as the claim is set out in the printed patent, which reads "wherein $l_{ij} \dots$ " should read -- wherein $l_{ii} \dots$ --.

The 42nd line of column 15, as the claim is set out in the printed patent, which reads "... $(l_{ii})_1^*(r_i)_2$ and a second product $(l_{ii})_2^*(r_i)_1, \dots$ " should read -- ... $(l_{ii})_1^*(r_i)_2$ and a second product $(l_{ii})_2^*(r_i)_1, \dots$ --.

The 60th line of column 15, as the claim is set out in the printed patent, which reads "... reduces the strings to the form $(l_{ij})_k x_i = (r_i)_k \dots$ " should read -- ... reduces the strings to the form $(l_{ii})_k x_i = (r_i)_k \dots$ --.

The 3rd line of column 17, as the claim is set out in the printed patent, which reads " $(l_{ij})_k x_i = (r_i)_k$ " should read -- $(l_{ii})_k x_i = (r_i)_k$ --.

The 5th line of column 17, as the claim is set out in the printed patent, which reads "wherein $l_{ij} \dots$ " should read -- wherein $l_{ii} \dots$ --.

The 9th line of column 17, as the claim is set out in the printed patent, which reads "... $(l_{ii})_1^*(r_i)_2$ and a second ..." should read -- ... $(l_{ii})_1^*(r_i)_2$ and a second --.

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The 10th line of column 17, as the claim is set out in the printed patent, which reads
“... product $(l_{ij})_2 * (r_i)_b$, ...” should read -- ... product $(l_{ij})_2 * (r_i)_b$, --.

The 29th line of column 17, as the claim is set out in the printed patent, which reads
“... form $(l_{ij})_k x_i = (r_i)_k$...” should read -- ... form $(l_{ij})_k x_i = (r_i)_k$... --.

The 32nd line of column 17, as the claim is set out in the printed patent, which reads
“... of the strings to the form $(l_{ij})_k x_i = (r_i)_k$...” should read -- ... of the strings to the
form $(l_{ij})_k x_i = (r_i)_k$... --.

The 51st line of column 18, as the claim is set out in the printed patent, which reads
“ $(l_{ij})_k x_i = (r_i)_k$ ” should read -- $(l_{ij})_k x_i = (r_i)_k$ --.

The 53rd line of column 18, as the claim is set out in the printed patent, which reads
“wherein l_{ij} ...” should read -- wherein l_{ij} ... --.

The 57th line of column 18, as the claim is set out in the printed patent, which reads
“... a first product $(l_{ij})_1 * (r_i)_2$ and a second ...” should read -- ... a first product
 $(l_{ij})_1 * (r_i)_2$ and a second ... --.

The 58th line of column 18, as the claim is set out in the printed patent, which reads
“... product $(l_{ij})_2 * (r_i)_b$, ...” should read -- ... product $(l_{ij})_2 * (r_i)_b$, --.

The 2nd line of column 20, as the claim is set out in the printed patent, which reads
“... reduces the strings to the form $(l_{ij})_k x_i = (r_i)_k$...” should read -- ... reduces the
strings to the form $(l_{ij})_k x_i = (r_i)_k$... --.

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The 5th line of column 20, as the claim is set out in the printed patent, which reads
“... of the strings to the form $(l_{ii})_k x_i = (r_i)_k$...” should read -- ... of the strings to the
form $(l_{ii})_k x_i = (r_i)_k$... --.

Signed and Sealed this

Twenty-fifth Day of November, 2008



JON W. DUDAS
Director of the United States Patent and Trademark Office